BY ORDER OF THE COMMANDER
374TH AIRLIFT WING

374TH AIRLIFT WING INSTRUCTION
48-148

25 FEBRUARY 2016

Aerospace Medicine

IONIZING RADIATION SAFETY PROGRAM (PA)

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available for downloading or ordering on the e-Publishing website at **www.e-Publishing.af.mil**

RELEASABILITY: There are no releasability restrictions on this publication

---

OPR: 374 AMDS/SGPB

Certified by: 374 MDG/CC
(Col Angela M. Montellano)

Supersedes: 374 AWI 48-148, 13 March 2009

Pages: 12

This instruction describes the responsibilities of all personnel involved with the control and use of radioactive material and radiation producing devices at Yokota Air Base (AB). It also describes necessary procedures for the implementation of an effective radiation safety program at Yokota AB. This instruction applies only to ionizing radiation sources. Non-ionizing radiation sources such as lasers and electromagnetic field radiation emitters are not covered by this instruction. Governing directives for the radiation safety program are Department of Defense Instruction (DoDI) 6055.8, *Occupational Radiation Protection Program*, Air Force Policy Directive (AFPD) 48-1, *Aerospace Medicine Enterprise*, Air Force Instruction (AFI) 48-148, *Ionizing Radiation Protection,* AFI 40-201, *Managing Radioactive Materials in the US Air Force,* and Air Force Manual (AFMAN) 48-125, *Personnel Ionizing Radiation Dosimetry*. This instruction requires collecting and maintaining information protected by the Privacy Act of 1974 authorized by Section 20.2106(a) and (c), 10 Chapter I, Code of Federal Regulations (10 CFR 20.2106, *Records of individual monitoring results*, (a)(c)) as directed by E.O. 12196, 29 CFR 1910.1096, *Ionizing Radiation*, (b)(2)(iii), (n) and (o), implemented by AFMAN 48-125. System of records notice F044 AF SG O, *United States Air Force Master Radiation Exposure Registry* applies. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) AFMAN 33-363, *Management of Records*, and disposed of IAW the Air Force Records Disposition Schedule (RDS) located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functionals chain of command.

SUMMARY OF CHANGES

This revision was made mainly administratively to be consistent with requirements of revised AFI 48-148, AFI 40-201, and AFMAN 48-125. This instruction supersedes 374 AWI 48-148, 13 March 2009.

1. Responsibilities.

1.1. The Commander, 374th Airlift Wing (374 AW/CC), Yokota AB, is responsible to:

1.1.1. Appoint, in writing, qualified individuals to be the primary and alternate Installation Radiation Safety Officers (IRSO) per AFI 48-148, paragraph 2.15.1. for Yokota AB. The IRSO will be Bioenvironmental Engineers or equivalent civilian at the 374th Aerospace Medicine Squadron Bioenvironmental Engineering Flight (374 AMDS/SGPB).

1.1.2. Ensure the installation radiation safety program is comprehensive, compliant with current requirements, and fully integrates the radiation safety programs of units, tenant units, and geographically separated units (GSUs) through the IRSO.

1.2. The IRSO is the individual who ensures the overall coordination of installation radiation safety activities and provides direct support and information to 374 AW/CC on radiation health and safety issues and effectiveness of measures to control radiation hazards to comply with Federal, DoD and AF requirements (ref: AFI 48-148, AFI 40-201, AFMAN 48-125) and is responsible to:

1.2.1. Establish and manage the overall installation radiation safety program IAW AFI 48-148, **Chapter 3**, for 374 AW/CC. The program must include periodic, but at least annual, reviews of procedures and practices, facility design and classification, training, exposure control, monitoring, and surveillance activities.

1.2.2. Publish an installation radiation safety instruction detailing local procedures for complying with applicable AF requirements and annually review it through the base publication process if changes are needed.

1.2.3. Establish and manage a personnel ionizing radiation dosimetry program for Yokota AB IAW AFMAN 48-125.

1.2.4. Manage the radioactive waste program for Yokota AB organizations IAW AFI 40-201, paragraph 3.10.

1.2.5. Oversee radioactive material/radiation producing device permits/authorization at Yokota AB.

1.2.6. Brief at least annually the Yokota Environmental and Safety Council required items and topics IAW AFI 48-148, paragraph 2.20.11 and AFI 40-201, paragraph 2.16.5.

1.2.7. Provide assistance to the Logistics Readiness Squadron (374 LRS) to ensure compliance with the application of AFI 40-201, local instructions and applicable Federal regulations on the receipt, shipment and transfer of radioactive materials.

1.2.8. Provide assistance to the Contracting Squadron (374 CONS) in evaluating compliance with AFI 40-201, local instructions and applicable Federal regulations on procurement of radioactive materials and contractor use on Yokota AB.

1.3. Unit Radiation Safety Officer (URSO) and Permit Radiation Safety Officer (PRSO) are designated, in writing, by organization or unit commanders when in possession of licensed radioactive materials under USAF radioactive material permit or radiation producing devices. URSO and PRSO are responsible to:

1.3.1. Establish and manage the organization or unit level radiation safety program IAW AFI 48-148, paragraph 2.21.1.

1.3.2. Notify and coordinate with the IRSO before making changes regarding radioactive materials or radiation sources (i.e., the amount or types of radioactive materials; new or altered radiation sources; special operations; or construction of new facilities). The IRSO shall also be notified prior to any change in facilities affecting source or device security requirements, increased potential for personnel exposures, the location of radioactive materials or radiation sources, or the potential for release of radioactive materials.

1.3.3. Request the IRSO for review and approval of any new or revised operating instructions, standard operating procedures or unit instructions impacting the radiation safety program prior to implementation.

2. As Low As Reasonably Achievable (ALARA).

2.1. The ALARA concept was developed in response to scientific evidence which suggests that no level of radiation exposure is entirely risk-free. It is a policy which states that although there are acceptable, conservative levels of radiation exposure specified by Federal regulations which offer a low risk of adverse health effects compared to the other hazards of life and occupation, it is prudent to make every effort to reduce exposures to the lowest levels reasonably achievable, thereby lowering the health risk associated with that exposure. In fact, individual and cumulative radiation exposures must be maintained as close to zero as possible given the type of activities involved, the state of technology, the risk to the individuals exposed and the benefit to society from the activity being accomplished.

2.2. ALARA Commitment. The guidance contained in this instruction provides the basis for conducting an effective ALARA program. The radiation safety program at Yokota AB is managed by the IRSO through this instruction for 374 AW/CC. Yokota AB is committed to the concept of ALARA.

3. Permits and Authorization for the Possession and Use of Radioactive Materials and Radiation Producing Devices.

3.1. The IRSO approves the possession and use of radioactive materials or radiation producing devices. Operations conducted under the conditions of the permit must be documented to ensure compliance with the installation ALARA program.

3.2. Organizations located at Yokota AB and contractors performing work at Yokota AB must possess a U.S. Nuclear Regulatory Commission (NRC) or Agreement State License, equivalent local license, or an AF or Navy radioactive material permit, or radioactive material/radiation producing device authorization provided by the IRSO in order to possess and/or use radioactive material or radiation producing devices.

3.2.1. Radioactive materials include any item that emits radiation without external power. Examples are byproduct, source and special nuclear material as defined in 10 CFR 30, *Rules of general applicability to domestic licensing of byproduct material*, 10

CFR 40, *Domestic licensing of source material*, and 10 CFR 70, *Domestic licensing of special nuclear material*. Products distributed as exempt by a manufacturer licensed to distribute to exempt persons do not require a permit, if used for their intended purpose.

3.2.2. A radiation producing device is any piece of equipment that emits ionizing radiation, regardless of intent, when energized by an external power source. Examples include medical and industrial x-ray machines, x-ray diffraction and fluorescence units, scanning and transmission electron microscopes and particle accelerators. In general, any device that accelerates electrons or other atomic particles with a potential difference of 10,000 volts or greater and produces x-radiation, either intentionally or unintentionally, may require an authorization from the IRSO. Some exceptions are television monitors, cathode ray tubes and video display terminals which are manufactured under the strict requirements of 21 CFR 1020.10, *Television receivers*.

3.3. Generally Licensed Devices (GLDs). NRC or Agreement State issues a general license to acquire, receive, use, store or transfer certain devices that contain radioactive material which have been manufactured, tested and labeled by the manufacturer in accordance with the specifications contained in a specific license issued to the manufacturer by NRC. These devices are labeled as being generally licensed.

3.3.1. GLDs used within USAF should be purchased using Defense Federal Acquisition Regulations, assigned an NSN and registered in the Federal Logistics Information System and Hazardous Material Information Resource System. All GLDs shall be registered in the USAF logistics system and identified as radioactive and inventoried in the USAF Radioactive Material Management Information System (RAMMIS).

3.3.2. All USAF units or organizations at Yokota AB who possess GLDs will:

3.3.2.1. Comply with NRC's Sealed Source and Device Registry (SSDR) requirements for each specific GLD device type and requirements in AFI 40-201, Attachment 2.

3.3.2.2. Appoint a responsible individual as GLD monitor to ensure that the requirements of the SSDR are met and that the RAMMIS inventory is current. The appointment memo shall be forwarded to the IRSO (374 AMDS/SGPB). The appointed individual will receive an initial briefing on proper management of GLDs from the IRSO.

3.4. Use of Radioactive Materials or Radiation Producing Devices by Contractors on Yokota AB.

3.4.1. 374 CONS shall ensure:

3.4.1.1. Monitoring and review of contracts on projects in which contractor(s) requires the use of devices that contain radioactive materials (i.e., soil density gauges), radiography cameras, or use of radiation producing devices (i.e., portable x-ray machines).

3.4.1.2. The IRSO reviews scope of work to assess radiation protection requirements prior to contractor(s) bringing radioactive material containing devices or radiation producing devices onto Yokota AB.

3.4.1.3. All contracts in the terms and conditions the IRSO determined must be in the contract in order to be in compliance with all applicable statutes, regulations and instructions for managing radioactive materials and radiation producing devices.

3.4.2. When contractors conduct operations involving the use of radioactive material or radiation producing devices on Yokota AB, a written approval must be obtained from the IRSO by submitting a request at least 30 calendar days before bringing the radioactive material or radiation producing devices onto Yokota AB (the requirement must be included in the statement of work for the contract). Requests must be in writing and include required items or information described in AFI 40-201, paragraph 3.4.5.2 (for radiation producing devices, radioactive material license equivalent document will be required).

3.4.3. As a general rule, Host Nation Funded Construction (HNFC) accomplished by the Government of Japan (GOJ); HNFC programs include Facilities Improvement Program (FIP) and other non-US funded construction under the specific condition of the Status of Forces Agreement, are out of the installation's jurisdiction and the requirements of this instruction do not apply (ref: United States Forces, Japan Instruction USFJI 32-1002, *Host Nation Funded Construction*). Under the jurisdiction of GOJ, the US Army Engineering District, Japan is responsible for the supervision and inspection of construction projects or operations. Requirements contained in applicable Japanese occupational safety and health regulations are enforced for projects or operation areas. However, when a condition exists or suspected which presents imminent danger to AF personnel outside of construction areas through their operations involving use of radioactive material or radiation producing devices, representative of the US Army Engineering District, Japan or appropriate agency in USFJ will contact the IRSO for resolution.

4. Training.

4.1. IAW AFI 48-148, paragraph 3.3, all personnel (military, civilians and in-house contractors) who have the potential to be occupationally exposed to above 1 mSv (100 mrem) in a year shall receive initial and annual training that is appropriate in breadth and depth to the radiation hazards present in the workplace, or when the IRSO determines the training is required:

4.1.1. Before the individual is permitted to assume duties with or in the vicinity of radiation sources.

4.1.2. Annually during a refresher training course.

4.1.3. When there is a significant change in duties or radiation safety requirements.

4.2. Training shall be provided by:

4.2.1. The URSO or PRSO with the assistance of the IRSO.

4.2.2. Other qualified personnel approved by the IRSO.

4.3. Training should include but not be limited to the topics described in AFI 48-148, paragraph 3.3.1. The topics of training for individuals who have the potential to be occupationally exposed less than 100 mrem in a year will be determined by the IRSO based on breadth and depth to the radiation hazards present in their duty/workplace.

4.4. Record of all radiation safety training shall be documented and maintained IAW AFI 48-148, paragraph 3.3.3.

5. Ionizing Radiation Dosimetry Program.

5.1. Radiation Workers. At Yokota AB, individuals who routinely work with or in the vicinity of sources of ionizing radiation may be designated as radiation workers by the IRSO after an evaluation of the potential hazards. IAW the monitoring criteria of AFI 48-148 and AFMAN 48-125, radiation workers are issued Thermoluminescent Dosimeters (TLD) which are exchanged either monthly or quarterly as determined by the IRSO. Under certain circumstances, radiation workers may also be issued direct reading pocket or digital dosimeters known as Electronic Personnel Dosimeters (EPDs) in addition to standard radiation dosimeters to permit immediate evaluation of a potentially hazardous radiation environment.

5.2. The supervisor, or designated radiation dosimeter monitor, of a newly assigned worker has the responsibility to request radiation monitoring for that individual. Monitoring shall be required if the worker shall be located in an area designated by the IRSO as a potential radiation hazard area or if, because of the assigned duties, the individual is classified as a radiation worker requiring dosimetry.

5.3. Each individual to be monitored shall be provided with a radiation safety briefing to include an explanation concerning proper wearing and storage of the dosimeter and the right to review the dosimetry results each month or quarter.

5.4. Annual Report of Occupational Exposure Dosimetry Results. The US Air Force School of Aerospace Medicine, Radiation Dosimetry Branch (USAFSAM/SDRD) provides The IRSO, via the Radiation Dosimetry Web, with SDRD Form 1527-1, *Annual Report of Individual Occupational Exposure to Ionizing Radiation*, to each individual entered on the dosimetry program for the previous calendar year. When the forms are received, the IRSO will review and deliver them with a cover letter accompanying instructions and comments if any to the workplace radiation dosimeter monitors within 30 days of receipt. The forms must be reviewed by each monitored individual and signed. Then, the signed forms will be returned to the IRSO. The IRSO ensures that the signed forms will be filed in the individual's medical records IAW AFMNA 48-125, paragraph 11.1.5.10. The IRSO maintains a record copy (signed SDRD Form 1527-1) in each workplace dosimetry binder for 5 years.

5.5. Cumulative History of Occupational Exposure. SDRD Form 1527-2s, *Cumulative History of Individual Occupational Exposure to Ionizing Radiation,* (equivalent to NRC Form 4, *Cumulative Occupational Dose History*), which summarizes an individual's cumulative dosimetry history results will be provided upon written request of the individual, the IRSO, or other authorized organizations and individuals. All requests other than those made for official Air Force use must have a release signed by the individual for whom the report is requested.

5.6. The supervisor shall reinforce this information by introducing the dosimeter monitor who shall indicate the dosimeter storage location and describe the procedures for requesting a review of the dosimetry results maintained by the supervisor.

5.7. Visitors to any restricted areas IAW AFI 48-148, paragraph 5.2.5 shall be accompanied by persons knowledgeable about the protection and safety measures in the area and must be provided adequate information and instruction before entering the area. Visitors entering a radiation area or that could incur a deep dose equivalent of greater than 10 millirem shall be provided appropriate personnel monitoring devices. The responsible supervisor shall contact the IRSO for coordination of issuing the monitoring devices to the visitor.

5.8. In addition to routinely issued radiation monitoring badges, some activities of a higher risk of a large exposure may also require the use of EPDs or similar device. Unlike TLDs, pocket dosimeters are designed to be evaluated immediately. Although traditionally not as accurate as TLDs, EPDs do provide an instant indication as to whether an exposure has occurred. For this reason, EPDs are normally issued to visitors likely to receive greater than 10 millirem so that it can be determined if an exposure has occurred before the visitor is lost to follow-up.

5.9. Investigation Levels. In addition to federally imposed dose limits (ref: AFI 48-148, Attachment 4), the NRC has also recommended the adoption of investigation levels for radiation workers. These levels are not legal limits. They are values arbitrarily set normally at 10 percent of the federally mandated limits to assist radiation safety program monitors to comply with the ALARA concept by anticipating potential difficulties and initiating corrective actions. Therefore, investigations shall be accomplished in a timely manner by the IRSO for doses received by individuals in excess of the established ALARA levels. The investigation shall consider each such exposure in comparison with those of others performing similar tasks.

5.9.1. Locally Established Investigation Levels. Based on review of historical personnel dosimetry data at Yokota AB, The IRSO has established the following investigation level IAW AFI 48-148, paragraph 3.4.3:

5.9.1.1. A dose in excess of 50 mrem per monthly TLD for pregnant workers.

5.9.1.2. A dose in excess of 125 mrem per quarterly TLD for regular radiation workers.

5.9.2. If any person receives a dose in excess of the established investigation levels for the month, or quarter, an investigation is initiated by the IRSO. A memo for record or a formal report is written as necessary or when recommended. A corrective action is deemed appropriate for reducing exposure levels.

6. Radioactive Material Receipt, Storage, and Shipment.

6.1. Special precautions shall be taken by the PRSO when receiving and opening packages containing licensed radioactive material under USAF radioactive material permits or NRC license.

6.1.1. Visually inspect the package and, if damaged, notify the IRSO immediately.

6.1.2. Measure the exposure rate at the package surface and, if greater than expected, contact the IRSO.

6.1.3. Verify the contents with the packing slip.

6.1.4. Examine the integrity of the final source container.

6.1.5. If anything unusual is encountered contact The IRSO.

6.1.6. As specified in 10 CFR 20.1906, *Procedures for receiving and opening packages*, packages containing in excess of certain specified quantities of radioactive material must be inspected IAW paragraphs 6.1.1 through 6.1.5, and monitored for external radiation and contamination within 3 hours after receipt during working hours and within 3 hours from the beginning of the next working day if it is received after working hours. 374th Logistic Readiness Squadron (374 LRS), Traffic Management Office (TMO) shall contact the IRSO to inspect and monitor packages. 374 LRS TMO personnel shall not transfer any radioactive material to a unit on the installation without prior coordination with the IRSO.

6.2. Storage.

6.2.1. When approved by the IRSO, sealed sources which are exempt from license requirement IAW AFI 40-201, paragraph 3.3.2. may be stored in unrestricted areas where containers are properly labeled, secured and radiation levels do not exceed 2 mrem/hr, one meter from any container in the storage configuration.

6.2.2. All non-exempt radioactive materials must be secured from unauthorized removal or access and must be inventoried. The responsible PRSO or commander designated individual is responsible for complying with the requirements in AFI 40-201, paragraph 3.6.

6.3. Shipment. The generating activity must properly identify radioactive material and items containing radioactive materials when sending to 374 LRS TMO for packaging and shipping in accordance with AFI 40-201, paragraph 3.8. 374 LRS TMO is responsible for preparing and transporting radioactive material shipments IAW 10 CFR 71, *Packaging and Transportation of Radioactive Material*, 49 CFR, *Transportation*, and *Defense Transportation Regulation (DTR)*, DOD 4500.9-R-PartII, *Cargo Movemen*t. The IRSO or the affected PRSO will ensure that all radioactive material shipment comply with all applicable requirements.

7. Managing and Disposal of Radioactive Materials.

7.1. Responsibility. Each organization shall assume full responsibility for collection, packaging, storage and disposal of radioactive waste generated IAW AFI 40-201, Attachment 5. Each radioactive waste generating organization shall provide a secure, isolated area for temporary storage of its own waste, on-site, near the location where generated. Each site shall be evaluated and approved by the IRSO.

7.2. Management of Radioactive Waste. Managing and disposal of radioactive wastes will comply with the requirements in AFI 40-201, paragraph 3.10. In general, most of the radioactive wastes generated at Yokota AB are low level and the wastes are generated infrequently, such as when a device (i.e., electron tube, smoke alarm) used for many years is no longer required. The IRSO should be contacted as soon as the item is identified as excess and the IRSO shall provide the generating activity specific instructions for the proper management and handling of the item.

8. Review of Radiation Facility/Source Installation Plans.

8.1. Review of Construction and Facility Maintenance. All plans for modification of facilities or design of new facilities which involve the use of radioactive material or radiation producing devices must be reviewed and approved by the IRSO to ensure ALARA concept is implemented.

8.2. IAW AFI 48-148, paragraph 3.2.1, a qualified health physicist, Detachment 3, USAFSAM, Radiation Services Division (Det 3 USAFSAM/SDRH), Kadena AB, will be contacted for design reviews that are beyond the technical capability of the IRSO.

DOUGLAS C. DELAMATER, Colonel, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

DoDI 6055.8, *Occupational Radiation Protection Program*, 15 December 2009

AFMAN 33-363, *Management of Records*, 1 March 2008

AFPD 40-2, *Radioactive Materials (Non-Nuclear Weapons)*, 12 January 2015

AFI 40-201, *Radioactive Materials Management*, 17 September 2014

AFPD 48-1, *Aerospace Medicine Enterprise*, 23 August 2011

AFMAN 48-125, *Personnel Ionizing Radiation Dosimetry*, 4 October 2011

AFI 48-148, *Ionizing Radiation Protection*, 20 November 2014

USFJI 32-1002, *Host Nation Funded Construction*, 27 November 2002

10 CFR 20.1906, *Procedures for receiving and opening packages*

10 CFR 30, *Rules of general applicability to domestic licensing of byproduct material*

10 CFR 40, *Domestic licensing of source material*

10 CFR 70, *Domestic licensing of special nuclear material*

10 CFR 71, *Packaging and Transportation of Radioactive Material*

49 CFR, *Transportation*, and *Defense Transportation Regulation(DTR)*, DOD 4500.9-R-PartII, *Cargo Movemen*t

Adopted Forms:

AF Form 847, *Recommendation for Change of Publication*

SDRD Form 1527-1, *Annual Report of Individual Occupational Exposure to Ionizing Radiation*

SDRD Form 1527-2, *Cumulative History of Individual Occupational Expo sure to Ionizing Radiation*

NRC Form 4, *Cumulative Occupational Dose History*

NRC Form 241, *Report of Proposed Activities in Non-Agreement States, Areas of Exclusive Federal Jurisdiction, or Offshore Waters*

Abbreviations and Acronyms

ALARA—As Low As Reasonably Achievable

NRC—Nuclear Regulatory Commission

rem—Roentgen Equivalent Man

mrem—milli-Roentgen Equivalent Man

RIC—USAF Radioisotope Committee

TLD—Thermoluminescent Dosimeters

Terms

ALARA—Acronym for "as low as is reasonably achievable" means making every reasonable effort to maintain exposures to radiation as far below applicable dose limits as is practical, consistent with the purpose for which the activity is undertaken, taking into account the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations and in relation to utilization of nuclear energy, radioactive materials, and ionizing radiation in the public interest.

Exposure—In radiation protection, the act or occurrence of being exposed to ionizing radiation or radioactive material. In risk management, the frequency and length of time subjected to a hazard.

Investigation Level—A dose set by the installation RSO that requires further investigation when exceeded. Levels are normally tailored to each practice based on historical dosimetry records. The investigation is conducted to determine causative factors, and identify corrective measures, as appropriate.

Ionizing Radiation—Any electromagnetic or particulate radiation capable of producing ions, directly or indirectly in its passage through matter. Ionizing radiation includes gamma rays, X rays, alpha particles, beta particles, neutrons, protons and other particles and electromagnetic waves capable of producing ions.

Occupational Dose—The dose received by an individual in the course of employment in which the individual's assigned duties involve exposure to radiation or to radioactive material from regulated and unregulated sources of radiation, whether in the possession of the employer or other person. Occupational dose does not include dose received from background radiation; from any medical administration the individual has received; from exposure to patients administered radioactive material and released IAW applicable regulations; from voluntary participation in medical research programs; or as a member of the general public.

Permit RSO—The individual designated by the unit commander to continuously monitor the radiation protection program for a USAF Radioactive Material Permit. Each permittee (unit commander) must appoint a Permit RSO in the permit application process to be approved by the Installation RSO.

Radiation Safety Officer—An individual with specific education, military training, and professional experience in radiation protection practice appointed by a commander or the USAF RIC to manage radiation safety programs. The term "Radiation Safety Officer" is a functional title and does not denote a commissioned status or specialty code. An RSO should be the most technically qualified person available. The RSO must have the education, military training, and professional experience needed for the job. Take care when addressing RSO qualifications and duties to distinguish between installation and permit RSOs. Individuals appointed as the installation RSO may not always have the specific technical experience and training needed to qualify as the permit RSO.

Roentgen Equivalent Man (rem)—The conventional unit of any of the quantities expressed as dose equivalent. The dose equivalent in rems is equal to the absorbed dose in rads multiplied by a radiation quality factor, Q.

USAF Radioactive Material Permit—Written authorization from the USAF RIC for AF organizations to receive, possess, use, distribute, store, transport, transfer and dispose of radioactive materials. Permits parallel NRC licenses in applications and scope. Unlike the NRC, a single permit may authorize Byproduct, Source, Special Nuclear Material, Accelerator Produced Radioactive Material and Naturally Occurring Radioactive Material.

USAF Radioisotope Committee (RIC)—A committee set up according to the AF Master Materials License to coordinate the administrative and regulatory aspects of licensing, receiving, possessing, using, distributing, storing, transporting, transferring and disposing of all radioactive materials in the AF except that transferred from the Department of Energy to the Department of Defense in nuclear weapon systems, certain radioactive parts of weapons systems and nuclear reactor systems, parts and fuel controlled under Section 91b of the AEA.